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Volume VII FEBRUARY, 1946 Number 2

# DISEASES OF THE NERVOUS SYSTEM

A PRACTICAL JOURNAL ON PSYCHIATRY AND NEUROLOGY

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DISEASES of the NERVOUS SYSTEM

(PUBLISHED MONTHLY)

A PRACTICAL JOURNAL ON PSYCHIATRY AND NEUROLOGY

# Some Aspects of Epilepsy in the Navy

COMDR. HERMAN CHOR, MC, USNR
*Chicago, Illinois*

There are more than a half million persons in the United States who are victims of epilepsy. In a group of 100 young individuals, it may be assumed that there is at least one person subject to this disorder. The curve of age incidence in epilepsy shows that the peak is reached in the second and third decades. It is therefore inevitable that the problem of epilepsy in the armed forces should be of some concern.

The epileptic is a definite risk in a military machine. One spell of unconsciousness could be responsible for tremendous damage or loss of life and material. The Navy Medical Department realizes this, hence cases of epilepsy as a rule, have received prompt dismissal from the Service. During the war, however, because of the great expansion of our Navy, and the ever growing need for manpower there developed a more conservative attitude toward the disposition of the epileptic. Some individuals have spells at such infrequent intervals, possibly not oftener than one in six months, it was considered a waste of manpower to discharge them from the Service. This is especially true in cases where the men are otherwise in excellent health and possess desired abilities. Such individuals might do a good job on shore, in selected work, despite the occasional spell which might occur. It should be stressed, however, that the epileptic does not belong aboard ship. He represents a hazard to himself, his shipmates and to his ship.

The effort to prevent occurrence of epileptic seizures in our Navy begins rightly with the elimination of known epileptics, or suspect epileptics, by means of careful examination at the recruiting offices, induction centers, and naval training stations. Occasionally a candidate may have a typical seizure at the time he is being examined. The witnessing of such an attack by a competent examiner is sufficient basis for a diagnosis of convulsive disorder and cause for rejection. Routine questioning of a candidate always includes the question, "Have you ever had severe dizzy spells, fainting attacks or any type of spell or fit?" When the question is answered in the affirmative, the candidate is questioned further and his case investigated thoroughly, regarding the possibility of his having epilepsy. Occasionally, a candidate volunteers the information that he has had repeated spells of unconsciousness, or fainting for years and that he has been under a physician's care. Some frankly state that they have epileptic attacks. These men, obviously should be held for further investigation and verification of their statements.

Not infrequently, a recruit produces letters from physicians testifying that the bearer is under treatment for unconscious spells. When such a statement has been verified, the candidate should be rejected.

It is well recognized by physicians who have had experience in the examination of recruits, that the epileptic, in contrast to the malingerer, is notoriously a "reverse malingerer"; that is, he may make every attempt to conceal the fact that he is a victim of a convulsive disorder. He knows that if he ad-

mits having spells, he will be rejected. Those who desire military service, will therefore hide such information and even lie about it, regardless of the possible later charge of fraudulent enlistment.

There are individuals, who, although having been subject to spells for a long time, have been free from them for many months, or even years before entering the service. These men may think they are cured, that there will be no further spells, therefore, they don't mention them. Furthermore, there are those who, having taken prescribed medication regularly have been kept free from spells and consequently deny having them. It is inevitable therefore, that many epileptics and potential epileptics are accepted into the Navy and find their way to our training stations and ships.

Another source of cases of epilepsy is the group, who, although they have never experienced a definite spell of loss of consciousness, have had one or more of the following: migraine headaches, episodes of sleep-walking, nightmares, nocturnal enuresis, uncontrollable fits of temper, or other impulsive acts or episodes of bizarre behavior. Many of the latter may be recognized as epileptiform equivalents. Neuropsychiatrists are familiar with the fact that it is not uncommon for individuals with any of the above complaints to eventually have a true unconscious spell, with or without convulsions. These complaints, therefore, have significance as evidence of potential epilepsy. Unless they are considered in themselves sufficient cause for rejection, they should at least sound a warning and call for further investigation, including, when possible, electroencephalographic studies. Many potential epileptics could be detected by electroencephalographic studies. Similar investigations should be made of those candidates who "pass out" while awaiting or during the procedure of a blood test, or some other examination. Many individuals are not aware of the significance of petit mal attacks.

There are those individuals whose histories and examinations give no clue whatsoever to the existence of a convulsive disorder, but who, some time after their acceptance into the Navy, may have their first spell, which is a great shock to them.

Many physicians and investigators experienced in the significance of the electroencephalogram assert that routine brainwave tracings will uncover potential epileptics in otherwise apparently normal healthy individuals, who are entirely unsuspecting that they harbour such a predisposition, just as the routine chest x-ray has revealed lung pathology in unsuspecting persons. Although it has been found impractical to utilize this highly technical laboratory method routinely, it has been employed regularly in some training stations in all cases suspected of nervous disorder and its value has been demonstrated.*

The present study utilizes the case material hospitalized at a Naval Mobile Hospital in the Pacific area. The thirty-one cases of epilepsy studied came from thirty-one different ships. These patients were hospitalized in the neuropsychiatric ward, where a total of 400 neuropsychiatric patients had been admitted. Epilepsy ranked third in frequency, surpassed in number only by the psychoneuroses and those cases diagnosed "Constitutional Psychopathic State". The cases diagnosed "Epilepsy" are primarily of the idiopathic type and in no instance were there objective signs indicating focal organic brain involvement.

The following charts present data considered pertinent to this study; some of the case histories were not as complete as desired but have been utilized for the data available (See Chart).

## ANALYSIS OF DATA

*Age:* Ranges from 17 to 32 years of age. Fifteen cases (about one-half of the group), occurred in men under 20 and all but four under 25 years of age. This is in keeping with the age incidence for idiopathic epilepsy observed in civilian life. It should be recalled also, that this is the age group most desirable for military service. When a convulsive seizure occurs in an individual in the third decade or older, he should be studied carefully for organic involvement of the central nervous system.

*Onset of Spells:* Twenty-five of the 31 cases

*Solomon P., Harris, H. I., Wittson, C. L., and Hunt, W. A.: "Electroencephalography in the selection of Naval recruits," *U. S. Naval Medical Bulletin*, 41: 1310-1317, Sept., 1943.

had spells prior to entering the Service. This fact alone should have eliminated them at the time of their initial examination. Eleven had experienced spells since early childhood; most of the remaining cases had them for several years. The six men who deny any spells prior to enlistment gave the following histories regarding the onset: (1) Patient DEK had his first spell about three months after enlistment while on his initial tour of sea duty. He had been seasick with nausea and vomiting for two days. On the third day, he lost consciousness while on watch in the radio shack. A week later he had another spell. (2) Patient G.O. had his first spell when in "boot training". (3) Patient J.L.F. enlisted in December 1939. In January 1941, he fell and struck his head against a 4 inch gun. He was rendered unconscious for about 20 minutes. He complained of some headache and dizziness for several days, then seemed to be fully recovered. Six months later, he had his first seizure. (4) Patient D.J.L. enlisted in November 1939. He had his first spell on board ship April 1941. It was diagnosed "Syncope". (5) Patient B.E.R. enlisted in November 1940 and had his first spell in March 1943, while in the radio shack. (6) Patient D.C.K. joined the Navy in April 1941. He had a grand mal seizure in January 1943. He gave a history, however, of an auto accident in August 1940, in which his head was injured, rendering him unconscious. He claims no recollection of events subsequently for a period of 19 days. He was an invalid for about 10 weeks, but denies any "spell" prior to enlistment.

*Length of Service:* Twenty-six of the 31 patients exhibited spells within the first 12 months of military service. The five patients who had their first spell after they had at least 12 months of service were 5 of the 6 men who denied ever having had spells before enlistment. These facts suggest that the epileptic who had gotten into the Navy despite his malady, is very liable to exhibit a spell early in his military career. In some instances men were deprived of their anti-convulsant medication which they had been taking secretly; in most instances, however, it would seem that the rigors and stress of military life may precipitate the seizure. Three of these men had spells while in "boot training" but managed to go on active duty aboard ship.

*Family History:* Gowers* remarked, "there are few diseases in the production, of which inheritance has a more marked influence than in epilepsy". Chronic alcoholism in the parents has long been recognized as a frequent pre-disposing factor. Other expressions of a poor nervous subsoil are extremely common in the family background of an epileptic. In the material studied this is certainly true. In at least 19 cases there was definite mention of a nervous disorder in the family. In 10, a history of unconscious spells in some other member of the family was elicited. Alcoholism, suicide and institutionalization for nervous breakdown were mentioned in several of the family histories.

*Effect of Stress and Strain of Combat Conditions, or the Harrassing Experiences of other Operational Activities:* There are many and varied exciting factors mentioned in the literature as precipitating a seizure in the predisposed individual. It may be anticipated that the excitement, fright and emotional duress which occur during actual combat, would have a dramatic effect upon the epileptic. This was found to be true in several cases; unfortunately no comment regarding actual combat was made in some of the histories. The fact that twenty-six of the 31 epileptics had seizures within the first year of their military service suggests that the experiences of operational activities, as well as actual combat, are sufficient to precipitate spells in the predisposed individuals. It is fortunate that so many of these afflicted men are apprehended early in their Naval careers, before they are qualified for duties which entail more responsibilities and hence involve more risk to themselves and others. Many men who are subject to epileptic spells show no other evidence of nervous instability or mental impairment. Theoretically, these men could be utilized in selected places ashore. That they are a risk, however, cannot be denied. In the opinion of most authorities, these men, along with those who show definite mental or personality changes, should be surveyed from the Navy; but as has been mentioned previously, certain selected cases

*Gowers, "Epilepsy and Other Convulsive Diseases"; Second Edition, Blakiston: 1901.

| Name<br>Rank<br>Case No. | Age | Admission Diagnosis | Type of Spell<br>Frequency | Onset of Spell<br>EPTE or Not | Months in Navy | Associated Complaints or Findings | Significant Family History | Course in Hospital<br>Remarks |
|---|---|---|---|---|---|---|---|---|
| C.B.Mc<br>S2c<br>No. 510 | 19 | Epilepsy | GRAND MAL<br>Epileptiform Equivalents<br>(?) | (?) Admits one spell before entering Navy<br>EPTE | 6 | Admitted in post-convulsion confusional state. Enuresis until 8—sleepwalking occasionally since 12 | | Several confusional episodes while in hospital (35 days) (on Phenobarbital) |
| G.O.<br>MoMM1c<br>No. 2727<br>Negro | 23 | Epilepsy | GRAND MAL<br>3 or more | April while in boot camp<br>DNEPTE | 12 | History not very reliable | | 1 Grand Mal seizure on ward (31 days on phenobarbital) |
| R.C.F.<br>S2c<br>No. 2652 | 27 | DU Epilepsy | GRAND MAL<br>Once a month average | 1928<br>EPTE | 2 | Seasickness, Sleepwalking, Enuresis | Mother has "fits"—Sister has "fits" | No spells during hospitalization (35 days) |
| J.L.F.<br>RM1c<br>No. 4025 | 24 | DU Headache | GRAND MAL<br>Epileptiform Equivalents<br>Several | Jan. 1941<br>DNEPTE<br>Followed head injury | 42 | Headaches since head injury—unconsciousness 30 min. No neurological findings. Bad dreams about combat experiences | Mother very hysterical and nervous | 1 Grand Mal spell during hospitalization (11 days). Many bad dreams |
| G.D.F.<br>S1c<br>No. 4146 | 22 | DU Epilepsy | PETIT MAL<br>4-20 spells daily | 1929 (when 8)<br>EPTE | 57<br>Combat noted | See case report following | | See full history following—Case No. 1 |
| D.J.L.<br>Y1c<br>No. 4431 | 22 | DU Syncope | GRAND MAL<br>5 spells in 7 months | April 1942 aboard ship<br>DNEPTE | 44 | Nervousness | | GQ station talker on bridge phones. Special sea detail manning engine room telegraph |
| B.A.S.<br>Y1c<br>No. 4678<br>Negro | 19 | DU Epilepsy | GRAND MAL<br>5 spells in 1 month | When 9 years<br>EPTE | 3 | Behavior problem. Mental defective | Mother has recurrent "spells", 3 brothers in detention home | Behavior problem on ship |
| B.M.<br>OS3c<br>No. 2872 | 22 | DU Epilepsy | GRAND MAL<br>Several | June 1938<br>EPTE | 38 | Headaches | | No spells in hospital (on Luminal) |
| B.R.H.<br>S2c<br>No. 3139 | 18 | Epilepsy | GRAND MAL<br>Several | April 1, 1942<br>EPTE | 9<br>Combat noted | Seasick, had spell on drill field at training station | Family ?. Reared in orphanage since 6 | No spells during hospitalization (10 days on Luminal) |
| E.E.W.<br>S2c<br>No. 1737 | 29 | DU Epilepsy | GRAND MAL<br>Several | Feb. 1941<br>EPTE | 8 | See full history following | | See full history following—Case II |
| G.A.R.<br>S2c<br>No. 3555 | 19 | DU Epilepsy | GRAND MAL<br>2 spells | May 1941 | 4 | Nail biter, Nightmares | | No spells on phenobarbital. Had spell while on watch aboard ship |
| P.J.O.<br>S2c<br>No. 3591 | 18 | DU Fainting Spells | GRAND MAL<br>1-2 times weekly | Childhood<br>EPTE | 5 | | Mother very nervous. Uncle severe alcoholic | 2 spells at training station. 3 spells on duty at Radar. Failed to report changes in machine |
| R.T.R.<br>RM3c<br>No. 3573 | 24 | DU Epilepsy | GRAND MAL<br>Several | Mar. 30, 1943<br>DNEPTE | 29 | | Mother died in State Hospital for mental disease. Cousin also died of mental condition | Had spells twice while taking radio message and missed part of message |
| Y.J.E.<br>S2c<br>No. 1872 | 30 | DU Mental Deficiency Moron | GRAND MAL | August 36<br>EPTE | 10 | Spells of rage—See full history following | Twin sister said to be "OK" | See full history following—Case III |
| K.D.C.<br>S2c<br>No. 3222 | 19 | Epilepsy | GRAND MAL<br>About once a month | June 43<br>DNEPTE | 22 | | | Post traumatic epilepsy. History of head injury in '40. Unconsciousness followed by amnesic period for 17 days. No objective neurological |
| D.E.K.<br>RM3c | 18 | DU Injuries | GRAND MAL | April 43 | 17 | Seasick. Admitted because of injuries sustained during a | Mother very nervous Aunt in mental hos- | 1 Grand Mal spell in hospital (10 days)—Denies any |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | month | | | | | amnesic period for 17 days. No objective neurological |
| D.E.K.<br>RM3c<br>No. 1842 | 18 | DU<br>Injuries | GRAND MAL<br>—<br>5 spells 1 mo. 7 in all | April 43<br>—<br>DNEPTE | 17 | Seasick. Admitted because of injuries sustained during a spell | Mother very nervous Aunt in mental hospital | 1 Grand Mal spell in hospital (10 days)—Denies any spells prior to going on sea duty |
| L.R.E.<br>QM3c<br>No. 4046 | 21 | Tonsillitis<br>Chronic | GRAND MAL<br>—<br>3-5 a week | 1942<br>—<br>EPTE | 14 | Several spells at training station | | Several light spells during hospitalization (10 days) |
| S.C.A.<br>S2c<br>No. 3331 | 32 | Seasickness | GRAND MAL | 1928<br>—<br>EPTE | 6 | Enuresis, Seasickness. See Case History following | | One spell in hospital (9 days)—See full history below.—Case IV |
| D.J.J.<br>S1c<br>No. 1726 | 18 | DU<br>Epilepsy<br>(Petit Mal) | GRAND MAL<br>—<br>Several | 1939<br>—<br>EPTE | 9 | Sleepwalking | Paternal grandmother had spells. Maternal grandmother suicide. 1 brother has fainting spells | Had spell when in front of mobile crane. Was run over injuring right foot |
| J.S.W.<br>S2c<br>No. 3213 | 19 | DU<br>Syncope | GRAND MAL<br>—<br>3 or more | Childhood<br>—<br>EPTE | 6 | Was under private physicians care | 1 brother has unconscious spells | One spell on ward (25 days) |
| E.O.D.<br>MoMM1c<br>No. 1684 | 26 | DU Medical<br>Observation<br>Petit Mal | GRAND MAL<br>PETIT MAL<br>—<br>6 major spells many petit mal spells a week | 1930<br>—<br>EPTE | 101 | Behavior spells. See complete history following | Maternal grandmother had epilepsy, 1 brother had alcoholic stroke, died at 37 | See full history following—Case V |
| H.B.E.<br>S2c<br>No. 3213 | 19 | DU<br>Syncope | GRAND MAL<br>—<br>3 or more | 1938 15<br>—<br>EPTE | 7 | | Mother has fainting spells | No spells in hospital |
| R.R.Mc<br>Pvt.USMC<br>No. 1055 | 17 | Epilepsy | GRAND MAL | 1940 15<br>—<br>EPTE | 7 | Head injury when 15. Unconscious 20 minutes | | No spells in hospital (15 days) |
| M.N.<br>S2c<br>No. 2238 | 19 | DU<br>Epilepsy | GRAND MAL<br>Epileptiform<br>Equivalents<br>—<br>1 spell every month or so | 1932 8<br>—<br>EPTE | 17 | Behavior problem. Nightmares | Mother had nervous breakdown | No spells during hospitalization |
| G.A.Mc<br>S2c<br>No. 565 | 21 | Epilepsy | GRAND MAL | July 37 at 15<br>—<br>EPTE | 5 | Had been treated for spells in clinic at City Hospital, St. Paul | Parents divorced. Sister a suicide | No spells in hospital (10 days).—1940 Medical Discharge from CCC because of spell |
| F.P.<br>S2c<br>No. 2001 | 19 | DU<br>Somnambulism | GRAND MAL<br>PETIT MAL<br>Equivalents | Childhood<br>—<br>EPTE | 22 | Sleepwalking. Bad dreams. See full history following | | See full history following—Case VI |
| P.A.H.<br>AS<br>No. 1682 | 18 | DU<br>Epilepsy | GRAND MAL<br>—<br>3 spells | Sept. 41<br>—<br>EPTE | ? | Headaches. Bed wetter. Nail biter. Behavior problem. Arrested for being drunk | Mother had "head trouble" | No spells in hospital (16 days on phenobarbital). Wet bed in hospital. Sloppy appearance—indifferent—dull mentally—conduct disorder |
| A.H.S.<br>S1c<br>No. 1634 | 21 | DU<br>Epilepsy | GRAND MAL<br>—<br>Every 2 months at onset then every month | Sept. 34<br>—<br>EPTE | ? | Headaches. "Passed out" while getting blood test at training station | Mother had fainting spells all her life. Brother had 2 unconscious spells | No spells in hospital (23 days on phenobarbital).—Had spell while working on scaffold aboard ship |
| R.E.O.<br>AS<br>No. 1587 | 18 | DU<br>Medical<br>Observation | GRAND MAL<br>PETIT MAL<br>Epileptiform<br>Equivalents<br>—<br>2-3 times daily | June 41<br>probably<br>earlier<br>—<br>EPTE | 4 | Sleepwalker. Bed wetter | Mother very nervous. Brother given discharge from Army, "didn't like work" | On Phenobarbital while in hospital (5 days). Had been under doctor's care before coming in Navy. Spells returned when he stopped medication |
| J.C.<br>AS<br>No. 1581 | 22 | DU<br>Epilepsy | GRAND MAL<br>—<br>2-3 "bad ones" a year. Many spells of headaches | Childhood<br>—<br>EPTE | 3 | Frequent nightmares | Father nervous World War I veteran. Sister has fits 1 a month. Uncle has fits every 2 weeks | In hospital 25 days |
| S.L.H.<br>AS<br>No. 2014 | 22 | Epilepsy | GRAND MAL<br>—<br>Frequency (?) | 1941<br>—<br>EPTE | 11 | Head injury at 9. Also knocked out playing football at 17 | Father has unconscious spells. Uncle is epileptic | One severe seizure in Hospital (27 days) |

are valuable to the Navy in limited capacities.

*Associated Symptomatology:* Seasickness was the major complaint in four cases. In one of these, the admission diagnosis was seasickness. Five of the patients were also victims of sleepwalking. Three others had severe nightmares. It is well known that an epileptic attack occurring at night may be misinterpreted as a nightmare. Five were also bed wetters. Four showed evidence of conduct disorder. One had attempted suicide. It is recommended that all cases of severe dizziness, seasickness, fainting attacks, sleepwalking, severe nightmares or any other unusual spells have the indulgence of the ship's physician and be given a hospital work-up. There should be less tendency on the part of the doctor to brush aside the complaints as "goldbricking" or malingering until the man has been given this consideration.

## ILLUSTRATIVE CASE HISTORIES

### *Exacerbation of "spells" brought on by combat*

Patient, G.D.F., Seaman, First Class, was admitted to the hospital on 6/16/43 because of spells of unconsciousness and nervousness. He enlisted in the Navy on 9/9/38 and had served on four different ship crews. The following is his own story regarding his illness:

"I first had these spells when I was 8 years old. I would get nervous and 'blackout' for about 8 seconds. When I was 10 my folks took me to a hospital in Denver, Colorado to see if they could figure out what it was. I kept on having them. I took chiropractic treatments when I was 13. They had no noticeable effect. My folks wrote to a doctor in Chicago and he prescribed phenobarbital medication. He never saw nor examined me. That was when I was 17. I've been taking that medicine ever since and it has helped me. I would have only about one spell a month. I had been taking the medicine about four months before I joined the Navy.

"These attacks are momentary lapses of consciousness. In some of them my lips will quiver and for a few seconds my mind goes blank. I've never fallen nor jerked, nor bit my tongue. Some of them last 5 or 6 seconds; my head jerks down and I 'freeze' for 5 or 6 seconds just like a jolt of electricity going through my body. Lately I can tell when they are coming. I feel depressed and have a pressure in my head.

"I didn't have many since joining the Navy (9/9/38) until 11/30/42 when we were in night action. I was scared and began to have 15 to 20 attacks each day for about 1 month. Then they gradually occurred less frequently. Most of them occurred when I was in my bunk. I'd have them while talking to someone.

"Recently, I had leave and while at home I got drunk and my attacks became frequent again, 15 to 20 a day. They gradually wore off until I was having only 1 or 2 a day. I've been awfully nervous ever since the war started. Lately, I have been worrying about my mother and I have been getting 4 or 5 attacks each day. I have most of them at bedtime or when I have time to think about home.

"My family send me phenobarbital by mail but I was getting scared of my condition and reported to the sick-bay requesting that I be sent to a hospital."

A diagnosis of epilepsy was made and he was transferred to the mainland for further hospitalization and disposition.

This case is interesting because it is an example of the effect of actual combat upon a well-controlled case of petit mal epilepsy of long standing. This man had "gotten-by" in the Navy for almost five years, by the use of medications obtained from the outside. Under stress of battle, however, the spells "broke through" rendering him unfit for service.

### *Epilepsy and Conduct Disorder*

Patient E.E.W., aged 29, Seaman, Second Class, was admitted to the hospital on 9/22/44 with the complaint of "dizzy spells and blackouts". He stated that his first attack occurred in December 1940 before enlistment. Since then he has had about 8 to 10 seizures. The typical attack occurs without warning. He suddenly loses consciousness and falls. Jerking movements, clenching of the teeth and frothing at the mouth have been reported by witnesses. On two occasions there was loss of bladder and bowel control. When in San Francisco he had severe attacks on the streets. He has been brought home by friends and by the police. On one occasion an ambulance was called for and he was brought home. Following the attack he is usually confused

for several hours. In addition to these major spells he has had many light spells and momentary lapses. In September 1941 he was hospitalized in San Francisco and a thorough investigation was made including x-rays, spinal puncture, etc. He was placed on phenobarbital medication. His spells were checked very well as long as he took the medicine. But if he neglected his pills, the spells would occur.

This patient presented a behavior problem also. He was extremely egocentric and had always been told that he tried to get by on his personality. He was moved from school to school and finally was sent to a private preparatory school which he left, however, two months before graduation. He stated that he was president of the student body and that he left voluntarily under adverse criticism, following a school "strike" in which the student body declared an unauthorized holiday.

His father was a well known and successful business man. After leaving school, the patient helped around home and drove a car for his father. Later he obtained employment with an airline and made 5 cruises to the Orient. In 1940 he worked 3 or 4 months as a runner on the New York Stock Exchange. He then remained unemployed until his enlistment in January 1942.

The patient admits the following difficulties since his enlistment: (1) Absence Over Leave 4 hours, 15 minutes in April; Deck Court Martial, assessed a $5.00 fine. (2) Trouble with a coxswain in June 1942. He was found lying on the deck when he should have been on duty. He thinks he probably had a spell just before he was discovered by the coxswain. An argument ensued. He was sent before the Captain's Mast for insubordination and given 5 days in the Brig on bread and water. (3) On July 9, 1942 he felt nervous, he went to sick bay and asked for phenobarbital. He says that it was refused, so he went "over the side" to get some medicine himself and stayed AWOL 3 days. When he returned he was given a Summary Court Martial and fined $108.00, given 20 days on bread and water. (4) While on liberty in town he had a seizure on the street. He was taken to the ship and later transferred to the hospital.

This patient illustrates the frequently encountered association of conduct disorder in the epileptic. It is not at all uncommon for these patients to get into difficulties because of acts committed during the confusional period following a spell. In some instances the unacceptable behavior itself may constitute a so-called epileptiform equivalent. Many epileptics, as demonstrated by the above case, are repeatedly in "hot water" because of their malady. In the cases studied, there were many examples of conduct disorder. Occasionally the seaman is accused of "shirking his duty" or of being "stupid" or insubordinate when he is in reality confused following a minor spell. The following case also illustrates this aspect of the epilepsy problem.

Patient, J. E. Y., aged 30, Seaman, Second Class was admitted to the hospital because of spells when "I get riled and go haywire". He was quite voluble and launched into a story of his past life. He stated that when he was a child his "head grew faster than his body". He said he was always different from his brothers and sisters, not as smart with books and not as settled or successful. He described himself as always of an impulsive nature and quick tempered. He stated that when he was about 17 years old he jumped from hiding behind a tree and made advances to a girl who was passing. The girl screamed and called the police. The patient eluded them and went home. A couple of years later he and two companions were arrested for disturbing the peace at a dance and were held in jail overnight and fined $10 each. At that time he was in the CCC camp and 3 weeks later he was given an administrative discharge because he had engaged in a fight.

The patient stated that he was middleweight prizefighter from 1933 to 1935. He fought approximately 50 bouts of which he lost about 15. In each of three bouts he was knocked out for about 5 minutes and in another fight for about 20 minutes.

He also complained of frequent severe headaches which, several times, were associated with vomiting. He then admitted that he had had spells of unconsciousness dating back to August 1936. He mentioned three definite episodes of unconsciousness with convulsions. In addition he had occasional momentary lapses during which his speech becomes "discon-

nected". Since enlistment, he has continued to have spells of unconsciousness. He recalls one spell on January 17, 1943, when under treatment for "cat fever" in the sick bay. He lost consciousness and fell and was "out" for about 10 minutes. Ten days later while waiting for a bus he had another spell and had to be assisted by his shipmates.

He admitted that he loses his temper easily and has engaged in many fist fights while aboard ship. He was on report for a fight in March and again in August. Recently, he engaged in a heated argument with the Master At Arms and was ordered to the hospital for observation.

On the ward he exhibited unrestrained childish talk. On the Kent test his mental age score was 13. He had two grand mal seizures while under observation.

Neurologic examination failed to reveal any critical signs of definite organic involvement of the central nervous system. Family history revealed that the patient had a twin sister in good health with no nervous trouble.

Here we have an example of uncontrolled rage and anger in an individual who also had recurring spells of loss of consciousness. Such an individual is certainly unfit for military service.

*Epilepsy and Seasickness*

Patient, S.C.A., aged 32, Ship's Cook, Third Class, was admitted to the hospital on 3/18/43 with a diagnosis of "Seasickness". He stated that since being aboard a PT boat he has suffered from continuous headaches, nausea and vomiting while underway. These symptoms are manifest even in calm seas and the slightest roll or pitch of the ship precipitates this syndrome. Patient states that he has vomited as often as 27 times in one day and that he has lost almost 20 pounds during the previous 6 weeks. No form of therapy has proved of any value in alleviating or preventing the symptoms. He then told of "spells of nervousness" that he has had since he was 17 years of age. These spells are sometimes brought on by excitement, accidents, fights, fast driving, etc., and are usually preceded by dizziness, frontal headaches and spots before the eyes. He then loses consciousness, falls, becomes stiff and shakes all over. Sometimes he has lost bowel and bladder control. He says he had bitten his tongue about 12 times. In 1934 he had a series of 12 spells in one week. Once, while working, he fell from a ladder and injured his back. He was in bed for about two weeks. In 1937 he fell on the street and struck his head such a blow that he bled from the nose and mouth. In 1938, he had a spell while driving an automobile and he hasn't driven since. He had spells at irregular intervals until he had an appendectomy in January 1942. After the operation he seemed to be free of spells. He enlisted in September 1942 and claims that he had no spells during the first 4 months of service. Since January 1943 he has been on duty aboard a small craft and has had three spells of unconsciousness.

This patient's past history deserves attention. He claims that he has always been in poor health. He had "paralysis or something" when a baby. He had enuresis until 16 years of age. He was subject to smothering spells when overheated. He was always car-sick. He was subject to bad dreams and night terrors. Since the age of 9 he has had headaches about 10 days out of each month. At the age of 16 he was taken out of the 7th grade because of his poor health. In 1941, he made a suicide attempt with Paris green following a divorce. He had remarried his wife whom he had divorced previously in 1936 because of her unfaithfulness. The second divorce was on the same grounds. Recently he had been so upset that he contemplated jumping over the side.

His family history is of interest in that a sister 37 years of age has also been subject to epileptic spells. A paternal cousin and a maternal uncle have been treated in institutions for chronic alcoholism. A brother is receiving a pension from the Navy because of a back condition.

On the ward he was described as listless, complaining constantly of headache and nervousness. His speech and mannerisms were somewhat effeminate.

Physical and neurological examinations were entirely negative. While in the hospital for nine days he was under phenobarbital but had one grand mal seizure before being transferred to the mainland.

*Epilepsy and Nightmares*

O. D. E., Machinist's Mate, First Class, aged 26 years stated that at the age of 12, in 1928, he fell striking his head against the tile edge of a swimming pool. He was unconscious for about 2 hours. There was no laceration of the scalp or bleeding from the nose, mouth or ears. He experienced no after-effects until 2 years later when he began to have spells at night. His mother told him that he would scream, turn black in the face and have jerking movements of the extremities for a few minutes, following which he would have a severe headache and feel drowsy. Over a period of about 2 years the patient had approximately 6 of these attacks. During this time he also had minor episodes in the daytime. These would occur 2 or 3 times a week and consist of a lapse of memory, an interruption of thought and a tremor for a few seconds. At irregular intervals the patient would be symptom-free for 1 to 2 months. He was seen by a specialist and a diagnosis of epilepsy was made. He was placed on a ketogenic diet and given phenobarbital. The patient found that he was free from attacks of any kind as long as he followed this treatment. He continued this regimen for about a year, then stopped all treatment except to avoid sweets. The attacks did not return and at the time when he joined the Navy in 1939, the patient believed that he was cured.

In September 1940, the patient awakened one morning with a severe headache and a bad taste in his mouth. A shipmate told him that he must have had a terrible nightmare during the night, that he had made a lot of noise and had fallen out of bed. The patient concluded that the spells were returning. He consulted a civilian doctor who concluded it was epilepsy and prescribed dilantin ½ grains and phenobarbital 1 grain twice daily. As long as he took this medication and avoided sweets the patient remained free from attacks but when he neglected the treatment he would have daytime lapses (petit mal) three or more times a week. Nocturnal attacks did not occur. Because the attacks continued at intervals and because the patient anticipated greater responsibilities, since he was next man in line for chief, he thought it best to consult the ship's Medical Officer. He did so and claims that he was advised to continue taking dilantin and phenobarbital. During the following month he continued to have daytime "blackouts". When he consulted the Medical Officer for a refill of medications and told of these spells hospitalization was advised.

*Epilepsy and Somnambulism*

F.P., Seaman, Second Class, aged 19, was admitted to the hospital with a diagnosis of "Sleepwalking". He also complained of "bad dreams" and "fainting spells". He stated that he has been subject to dizzy spells and occasional "fainting" spells since he was 7 or 8 years old. On one occasion at the age of 14 or 15 he awoke at night grasping and shaking the foot of the bad. He recalls that at 16 years of age he had a spell of unconsciousness and was carried home by his brother. About 3 or 4 months prior to enlistment he "passed out" while at work and was unconscious for two hours. He was taken by automobile to the doctor's office for examination.

The patient describes the following incident at Great Lakes Naval Training Station, in January 1941: Some of his money was stolen and during the night he dreamed he had caught the thief and was hitting him. He awakened to find that he had put his fist through a door panel. (Slight deformity of the metacarpophlangeal joint of the right ring finger persist).

The patient stated that a few days later he had "fainted" while folding his sea bag. He was retained in the sick bay under observation for about 3 weeks.

He related these incidents: In December 1941, he dreamed he was in a hotel and that it was on fire. He jumped from a top bunk to the deck and fell, spraining his right wrist. In March 1942, he fainted on the street in Seattle and was taken to the County Hospital. About October 1, 1942 during his sleep he took his mattress to the upper deck, went back to sleep on the springs and when he awoke in the morning he accused his mates of playing a joke on him.

He admitted having trouble keeping his mind on his work. His shipmates call him "Flew-the-coop," "Flew-ball" and "Flew-up-the-alley," "because I'm always gone when

they want me". He has been considered unreliable at work, he sleeps on watch, doesn't remain on the job, and complains that others take advantage of him, etc. He has an extensive sick-bay record, having been hospitalized at different times for heart trouble, appendicitis, kidney trouble, etc.

This case is interesting as an example of the close relationship between somnambulism and epilepsy. This has been corroberated by electroencephalograms taken in cases diagnosed somnambulism which show abnormal records of the type found in epilepsy. Solomon et. al. (see supra) state that, "somnambulism may be an epileptic manifestation". Five patients of our group had recurrent episodes of sleep-walking in addition to their spells of unconsciousness.

Nightmares likewise are frequently associated with epilepsy. An epileptic attack occurring during the night is frequently misinterpreted as a nightmare.

Bizarre behavior such as shaking of the bed, driving the fist through a door panel or other unusual acts performed when the patient is in a confused or dream state are recognized as "epileptiform equivalents" which are frequently associated with true grand mal seizures. Occasionally an individual may exhibit repeated episodes of peculiar behavior without having an associated spell of unconsciousness or grand mal. This may go on for months or years only to be replaced later by a true seizure.

## THE EPILEPTIC IS A HAZARD TO HIMSELF

Studies of accidents have shown that, "strange as it may seem," there are proportionately few serious injuries resulting from epileptic convulsions. Nevertheless, they do occur and an attempt is made to regulate the work and activities of the epileptic so as to minimize the likelihood of serious injury to himself. In the present group there were three patients who were severely injured as a result of a spell.

1) K.D.E. was admitted to the hospital with the diagnosis of "Multiple Injuries". In obtaining the history it was revealed that he had a severe convulsion aboard ship and fell, suffering severe lacerations. 2) D.J.J. was in front of a mobile crane when he had a seizure. Before the crane could be stopped he was run over and his foot was crushed. 3) S.A.H. had a spell while working on the scaffold aboard ship and fell off, sustaining a severe injury. It is abvious that hazardous tasks should not be assigned to individuals liable to sudden spells of unconsciousness.

## THE EPILEPTIC MAY ENDANGER OTHERS ABOARD SHIP OR INTERFERE WITH THE CONDUCT OF SHIP MANEUVERS

The safety of the ship and the lives of its crew often depend upon the watchfulness of a few individuals entrusted with important duties. It is hazardous to assign such duties to men subject to seizures. There are three such instances in the present study: 1) P.J.O. on two separate occasions had spells of unconsciousness while on watch at the Radar apparatus and failed to report changes in the machine. 2) R.T.R. had spells while on duty in the radio shack. On two occasions he missed radio messages. 3) C.A.R. had a spell while on watch and was charged with dereliction of duty.

There are no doubt many more tragic stories which could be added to the above instances. The obvious conclusion is that the epileptic does not belong aboard ship.

## SUMMARY

1. Thirty-one cases of epilepsy occurring in men on sea duty have been studied. These men came from 31 different ships.

2. Twenty-five of them admitted having had spells before entering the Navy. These should have been rejected.

3. Epileptics who have "gotten by" the recruiting offices or the receiving stations are likely to exhibit spells within the first 12 months of Naval Service.

4. Actual combat or other operational activities may precipitate spells in the predisposed individual.

5. The epileptic in the Navy is a danger to himself and to his shipmates. He should not be entrusted with sea duty and if retained in the service his duty should be restricted to shore work in a special category.

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# The Use of Dilantin in the Treatment of Psychotic Patients Unresponsive to Other Treatment

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Since the development of dilantin sodium and its utilization in convulsive disorders, there have been reports upon its use and effects upon both epileptic and psychotic patients. Kalinowski and Putnam described its utilization in sixty variously psychotic patients among whom over 50 per cent showed at least some improvement. It has also been reported by Soloman that good results were obtained with dilantin in behavior problems associated with epilepsy. The literature discloses also, that there is often an improvement in the general behavior of chronically psychotic patients and that improvement may occur frequently in performance ratings of chronic epileptics receiving this drug.

Following the suggestions of Kalinowski and Putnam, a series of psychotic patients were treated at Eloise Hospital with varying doses of dilantin and the results were recorded. In addition, an attempt was made tod etermine the effectiveness of dilantin in patients who had already had other treatments which had proved inadequate for satisfactory improvement. Most of these patients were treated in the building used for the more disturbed patients in the institution.

Seventy-three patients were treated with doses of dilantin varying from three to seven 1/10 gram capsules daily. The least amount used with subsequent improvement was 55 capsules over a 13 day period and the largest amount was 2,160 over a 260 day period.

A few of the patients were relatively acutely psychotic in that their disturbed behavior had persisted less than a year (14 in number), while all the others had shown persistent chronically disturbed behavior over a period of time ranging from 1 to 16 years, the average being 4 years 8 months.

The number of patients and types of mental disorders were as follows:

1. Schizophrenia
   - (a) Catatonic ..... 17
   - (b) Hebephrenic ..... 10
   - (c) Paranoid ..... 8
2. General Paresis ..... 21
3. Manic Depressive Psychosis
   - (a) Depressed ..... 2
   - (b) Manic ..... 9
4. Senile Psychosis ..... 3
5. Paranoid Condition ..... 1
6. Mental Deficiency ..... 1
7. Psychosis with Cerebral Arteriosclerosis 1
8. Involutional Melancholia ..... 1

Of the thirty-five patients with schizophrenia treated, eight were greatly improved and four of these were paroled home. Two were slightly improved. Two of the twenty-one general paretic patients were greatly improved, one was paroled home and one was discharged from the ward as improved. Seven were slightly improved. One of the manic depressive patients, depressed phase, was greatly improved, while of the group of the manic type, five were greatly improved with three paroled home and two others were slightly improved. Of the three patients suffering from senile psychosis, one was greatly improved and one was slightly improved. There was no change in the patients suffering with involutional melancholia, paranoid condition, or psychosis with cerebral arteriosclerosis.

The behavior of many of the patients showed marked changes upon the administration of dilantin. In some cases it caused a more disturbed state, while in others the drug acted more as a sedative. One patient had received 90 capsules of dilantin over a period of 20 days. Upon the discontinuance of the drug, he improved sufficiently to be able to adjust and cooperate on the ward doing minor ward work with a subsequent transfer to a better ward. It was observed also that at times patients who had been receiving sodium amytal because of their disturbed state and who had shown an excitatory or stimulatory effect of the sodium

amytal, were promptly controlled by dilantin medication.

The excited or disturbed type of patients were more responsive to dilantin medication than the depressed or retarded type. Of the 73 patients treated, 64 were disturbed and 9 were retarded or depressed. The greater percentage of improvements occurred in the disturbed patients. In this group of 64 there were 16 who were greatly improved and 12 slightly improved. In the group of 9 retarded patients only one showed improvement.

Typical examples of the patients benefiting by the use of dilantin are as follows:

(1) *The acutely disturbed type in which dilantin produces a sedative effect:* G. K., a 29-year-old white male who was admitted for the fifth time to the hospital on June 25, 1943. The first psychotic episode had occurred in 1935 at the age of 22. He had been studying at one of the local universities when he developed symptoms which were characterized by a catatonic stupor. He improved and was paroled home from the hospital. He had had five subsequent readmissions, each time for an acute catatonic state, characterized by marked excitement, volubility of speech, delusions of a paranoid type, and auditory hallucinations. Following the last admission on June 25, 1943, the patient displayed a constant catatonic excitement phase. He remained chronically excited until October 19, when he was placed under dilantin medication. He was given three capsules a day, later increased to five daily. About three days after beginning this treatment, the patient appeared to be slightly less active. He still was definitely disturbed, however, chattered in an incoherent manner, denounced everyone, and spoke freely and profanely. On October 26 the dilantin was discontinued. On October 28 the patient was observed to be much quieter. He showed no more of his marked talkative behavior and cooperated sufficiently to do some minor work on the ward. On November 26 the patient's grandfather died and he was told of this by his father. The next day he became very talkative, over-active, noisy, tore off his clothing, and it was necessary to employ restraint and seclusion. Dilantin was again given, with the dosage increased to five capsules daily on the third day. After two days of this treatment, the patient quieted down to better adjustive behavior. He continued to remain quiet, in spite of the fact that the dilantin was discontinued one week later. On December 24 the patient was paroled to his home and up to the present time, the patient has been adjusting very well at home and is being seen monthly at the parole clinic.

(2) *Acutely disturbed type in which dilantin increases the excitement, but with subsequent improvement of the patient upon stopping the medication:* H. F., aged 34, a white male, was first admitted to the hospital January 28, 1929, and was later diagnosed schizophrenia, catatonic type. For several years he had shown a retarded apathetic state in which he sat around apparently uninterested in anything, untidy in his habits, experiencing auditory hallucinations and, for the most part, continuing in a semi-stuporous state. In January 1944, he began to show a change in his behavior. He would throw himself on the floor and he talked in an incoherent and irrelevant fashion with a considerable pressure of speech. It was necessary to keep him in restraints because of his violence and aggressiveness. On February 24, 1944, dilantin therapy was started. He was given three capsules daily and this was increased to five a day. Medication continued until March 14 and then was discontinued. About four days later it was noted that the patient had improved a great deal, talked coherently and relevantly, gave some of the more pertinent facts regarding his last hospitalization, and cooperated more satisfactorily with the attendants on the ward. Since that time, the patient has again reverted to his former mild, stuporous, catatonic state. The total amount of medication given was 90 capsules over a period of twenty days.

(3) *The chronically disturbed senile type in which dilantin leads to better hospital adjustment:* C. H., a 66-year-old white male, was admitted to the hospital on October 30, 1943. He had shown, throughout his life, an unstable type of personality with paranoid ideas against his neighbors, but on the whole he had been periodically hypomanic. Shortly after admission to the hospital, the patient became over-active, talkative, was frequently assaultive, attacked other patients, and destroyed clothing and furniture. He would often destroy an entire bed. It was necessary

to keep him constantly in restraints and secluded. His language was offensive and at every opportunity he would attack other patients. On March 17, 1944, the patient was given three capsules of dilantin daily which was continued until February 1, 1945. During that time the patient made a progressively satisfactory adjustment. Disturbed behavior, verbal abuse, and assaultive attitudes diminished progressively. He is now cleanly dressed and is not destructive in any way. Since the dilantin has been discontinued, the patient has continued to adjust well. He received a total of 960 capsules of dilantin over a 320-day period.

(4) *Depressed phase of Manic-Depressive Psychosis in which there was a marked improvement after the patient received dilantin therapy:* C. C., white male, age 62, was readmitted to Eloise Hospital for the third time on September 26, 1944. His diagnosis was manic depressive psychosis, circular type. According to the history, since 1911 he had been having periodic attacks that usually started with a hypomanic episode and terminated with a depressed period. He was first admitted to Eloise Hospital on November 14, 1937, where he received only general care. He gradually improved, was paroled on June 1, 1938, and discharged on February 8, 1939. He was readmitted on June 14, 1941 and soon after this he was given five metrazol treatments with a rapid improvement. He was paroled on July 31 and discharged August 13, 1941. At the time of his last admission on September 26, 1944, he was badly depressed and had many somatic complaints. He was given sinusoidal shock therapy on November 20, 1944, but this had to be discontinued after the first treatment because of a back injury. On November 23, 1944 he was started on five capsules of sodium dinaltin daily and after three or four days there was considerable improvement in his mental condition. He became less depressed, took considerably more interest in his personal appearance and surroundings. He continued to improve rapidly until February 22, 1945, at which time he was given a three-year parole. Since then he had made a good social and work adjustment. He had received 304 dilantin capsules over a 61-day period.

(5) *The use of intramuscular dilantin-in-oil in the treatment of an uncooperative general paretic, juvenile type, who refused oral administration of dilantin:* W. J. W., an 18-year-old negro male, was admitted to Eloise Hospital for the first time on August 2, 1945. His general behavior revealed a catatonic-like reaction. He sat about without appreciation of what was going on in his immediate surroundings, was confused, and could not follow the routine of the ward. He was unable to feed or dress himself and was untidy in his habits and in his personal appearance. On August 30 and September 9, the patient had a series of epileptiform convulsions. It was necessary on each occasion to treat him with intravenous sodium amytal, 7½ grains, to control the seizures. It was impossible to treat this patient for his paresis in the usual manner because of the danger of convulsive seizures during the treatment.

On September 10, an attempt was made to give the patient dilantin orally, but he refused to cooperate. It appeared for a time that the usual treatment for general paresis would have to be postponed indefinitely as there was no medication which could be given over a long period of time to prevent the recurrence of the epileptiform seizures.

A preparation of dilantin-in-oil, 1½ grains sodium dilantin per cc. of oil, was obtained in 2 cc. ampules. On September 13, the patient was started on dilantin-in-oil intramuscularly. He received two ampules daily until September 28. Response to the intramuscular injections was noticed on the fourth day of treatment. There was a marked improvement in his general behavior. He began to take more interest in his surroundings and in his appearance. On September 28, he was able to cooperate sufficiently to take the dilantin orally and since that time he has received three capsules daily. He has been quiet, cooperative, is able to care for his daily needs and is no longer untidy in his habits or his personal appearance. At the present time he is able to do light work on the ward. Since September 13 he has had no recurrence of the epileptiform convulsions.

## DISCUSSION

Of the seventy-three patients treated over varying periods with various dosages, 17, or 23 per cent improved a great deal. Seven of

these were paroled home and made good adjustments. Twelve, or 16 per cent showed slight improvement. These patients were more cooperative and better adjusted in their ward behavior.

Dilantin is unquestionably a valuable drug for some types of disturbed patients. It is usually effective in such conditions as catatonic excitement, manic excitement, and the excitement of organic disorders. In some of the less chronic patients it has a sedative effect. It was also noted that in those patients where sodium amytal proved stimulatory in effect, dilantin was used with a considerable amount of therapeutic effect. Certain patients showed an increase in their psycho-physiological activities under the influence of dilantin, but with its discontinuance followed by definite improvement. The use of this drug has somewhat the same status as other therapies used in the functional mental disorders and has many advantages over some forms of treatment for disturbed patients. Sinusoidal treatment in some cases does not produce the necessary results so that the patients are still disturbed after the treatment has been given.

## CONCLUSION

The use of this drug is of value in the treatment of prolonged chronic disturbed behavior in psychotic patients. Especially is it valuable in the treatment of those patients who have made either insufficient or no response to other types of therapy, or who for various reasons cannot be given the customary forms of treatment. The therapeutic effect of the drug is primarily that of decreasing significantly the extent and severity of persistent disturbed behavior, with a consequent better adjustment for the patient and even the development of accessibility to psychotherapy. Additionally for those patients who respond to the usual barbiturate sedation with excitatory behavior, this drug can safely be used as a sedative. No contraindication for this drug has been noted and the only unfavorable symptom observed has been a mild intoxication which subsided promptly upon dosage reduction.

The administration of dilantin-in-oil intramuscularly has been found at least as effective as the oral administration of this drug. The former procedure has the advantage of being useful where the patient is unable to take the drug orally, or is too disturbed or psychotic to be able to cooperate for the oral administration of dilantin. It is thought that if the dilantin-in-oil had not been used in case of W. J. W., the outcome would not have been satisfactory at all. This patient is now receiving treatment for paresis which could not have been possible without the sedative effect of the drug.

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# Psychology of "Bad Influence" and "Good Advice"

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Popular opinion holds that good behavior results from avoiding "bad influence" and "bad examples" and being given "good advice" freely. The excuses, "I got into bad company" and "Nobody advised me properly," are for many a satisfactory explanation of actions of doubtful wisdom.

The psychiatric-psychoanalytic approach is less naive. We ask, first, why the "bad example" has such devastating effects in one case when it does not have such ill-effects in another; second, why the maximum of "good advice" given to a specific person "does not take" when its absence for other people does not prevent them from doing the right thing "instinctively." In short, we reduce the general external problem to the specific inner problem of the individual.

Remembering what "simpleton sages and reasoning fools,"[1] have accumulated throughout the long centuries on the subject of example, as quoted by philosophers and poets, we find that contradictions are the common denominator of their views. Below are a few examples.

What is the psychologic situation of a person when presented with either a good or a bad example? In the first place, the example *per se* hasn't the slightest influence on the psychic apparatus. What can happen, however, is the coincidence of two factors: For unconscious reasons, completely unrelated to

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*Optimistic Views*

*LaRochefoucauld:* "Nothing is more contagious than the example. We are incapable of doing something extraordinary, be it good or bad, which in turn does not produce something similar. We copy the good because of our tendency toward imitation, the bad because of the viciousness of our nature, a viciousness which was imprisoned by shame and set free by the example."

*Smiles:* "Example is one of the most potent of instructors, though it teaches without a tongue."

*La Fontaine:* "Example is a dangerous lure; where the wasp got through, the gnat sticks fast."

*Tertull:* "Bonos corrumpunt mores congressus mali." (Loose translation: "Bad examples corrupt good behavior.")

*Samuel Johnson:* "Example is more efficacious than precepts."

*Milton:* "Let it profit thee to have heard,
By terrible example, the reward
Of disobedience."

*Cicero:* "Men think they may justly do that for which they have a precedent."

*James Fox:* "Example will avail ten times more than precept."

*Pessimistic Views*

*Nietzsche:* "No one can draw more out of things, books included, than he already knows. A man has no ears for that to which experience has given him no access."

*Hegel:* "People and governments have never learned anything from history or acted on principles deduced from it."

*Oscar Wilde:* "Experience is the name everyone gives to his mistakes."

*Publius Syrus* (approx. 42 B. C.): "Many receive advice; few profit by it."

*Chevalier de Panat* (about the Bourbons after their restoration): "Ils n'ont rien appris ni rien cublié." ("They did not learn anything, nor have they forgotten anything.")

*Syrus:* "It is sometimes expedient to forget what you know."

*Pope:* "An excuse is worse and more terrible than a lie; for an excuse is a lie guarded."

*Shakespeare:* "Oftentimes, excusing of a fault
Doth make the fault the worse by the excuse;
As patches, set upon a little breach
Discredit more in hiding of the fault
Than did the fault before it was so patched."

actual events leading to the good or bad example, a specific person can be ready for an unconscious identification. Then and then only the example has effect and is followed by what the unpsychologically-trained observer erroneously calls imitation. Hence the problem reduces itself to the psychology of unconscious identification.

Unconscious identification denotes the taking over of another's opinions or the repetition of his actions without conscious awareness of so doing. The pupil who copies antics of his teacher, imitates his voice or opinions, acquires these traits via unconscious identification. If someone draws attention to this imitation, the object of the involuntary identification will indignantly deny it, and with good reason. He speaks for his consciousness and this didn't perform the identification; something happened behind the scenes of his personality.

A person setting a "good" or "bad" example offers himself, without knowing it, as a model for identification. A few clinical examples will clarify the process:

A patient, a poor orphan at the age of 1½, was brought up with his wealthy cousin. Both boys were strongly attached to the mother of the rich boy, but lived in constant fear of the father, a rigid, cold individual who was always preaching. At the age of 5 the patient came under the "bad influence," as the family put it, of a male servant, imitating him in theft and swindling. A strong identification with the servant was discernible. Analysis could prove that preceding this identification the boy had developed a strong oedipus complex (attachment to the parent of the opposite sex, in this case the boy's aunt), and had been driven out of this libidinous position through "fear of castration" (Freud) by the potential threat of the punishing uncle. The boy had then identified ("negative oedipus") with his aunt, a kind, submissive woman. He could later remember that at the age of 4 he had been teased because of his shyness and "girlishness." A few months later his behavior had changed once more; he had become provocative, a miniature truant and a delinquent. His family attributed this change to the influence of the servant, and dismissed the man. However, the boy continued to cheat and steal until late in life. We see in his case both the "good example" (represented by the hypermoral uncle) and the "bad example" (the servant). From the descriptive viewpoint it is not understandable why the boy finally chose the "bad example" with which to identify. Theoretically, both possibilities for identification were present at the same time. From the genetic viewpoint his choice is understandable: Instead of giving up his incestuous wishes and identifying himself with the uncle (the process leading to normality) the boy identified with the woman, thus accepting alleged "castration" as a punishment. This identification was counteracted by a strong inner feeling of guilt, so that a new alibi-identification had to be established proving his "aggression." Therefore he identified with the pseudo-aggressive servant.[2] However, his passivity was smuggled into the defense: Through stealing and swindling he came into deeper conflicts.[3]

Another example: The son of a well-known historian devoted his life to proving that all history is based on fallacy, thus belittling his father's life work. There were constant "scientific" conflicts between father and son. The son gleefully quoted statements disparaging the accuracy of historians. His favorite quotations were: "History is a fable agreed upon" (Napoleon). "On the breast of that huge Mississippi of falsehood called history" (Matthew Arnold). "History is bunk" (Henry Ford). The father was furious when his son quoted, first in conversations, later in his writings, the witty sentence of an "Anonymous": "History is something that never happened, written by a man who wasn't there." It was obvious in analysis, that the son's spiteful approach to his father's profession had as its basis, not an intellectual, but an affective conflict. The young man was inwardly deeply submissive toward his father ("negative oedipus"). He warded off this attachment with pseudo-aggression: "I'm not submissive toward my father; quite the contrary, I hate and ridicule him;" hence the irony against his father's profession. Here, too, two possible objects of identification could be discerned, the father and a cousin, an inhibited writer who constantly made "cracks" at the expense of his more successful relative. The sequence of events in this case was: neurotic solution of an inner con-

flict; use of an identification with a "bad influence" as a prop ("Other people don't believe father, either").

As a third clinical example I would like to mention a young woman from a puritanic family, who, in a specific period of her life (between the ages of 24 and 27), practically lived the life of a nymphomanic prostitute. She had sexual relations indiscriminately, was frigid[4,5] and insatiable. The question arose as to why she did not identify with her puritanic mother. It turned out that she did have this identification at first, but that it was later shattered when her mother remarried after the death of her husband, when the patient was 3. From the ages of 3 to 6 the patient lived alone with her mother and was completely under her influence and "loved her dearly." The mother's remarriage was perceived by the child as an act of abandonment and loss of love. She treated the stepfather coldly and even with hatred, as if he had "stolen" the mother. The hatred for the mother was bolstered by different influences: The old hatred stemming from the normal oedipus complex had developed during the first marriage; the father's death brought forward an intense feeling of guilt, with reactive submission toward the mother, since the child had previously wished her death. The second marriage activated the old oedipal wishes, which were warded off with coldness toward the stepfather. The child early developed symptoms of an obsessional neurosis, believing that she was "cursed." The first man she had loved (the father) had died. One of the many reasons for her constant change of lovers was a protective mechanism: If she were to stay longer with any of them, her own father's fate would overcome him. On a more superficial level, she identified with an aunt, a sister of her mother, the "black sheep" of the family. This woman spent most of her adult life in Europe instead of settling down in Boston, as was expected of her, and was followed by rumors of "continental affairs"—a euphemism for illegitimate love affairs.

We see in this case, which was near manifest homosexuality,[6,7] once more that the good example of the mother and the bad one of the mother's sister had no influence in themselves but were alternately used as props for inner conflict-solutions of the child.

To understand fully the effects of "bad influence" crystallized in "bad examples," we must take into account that the individual spends a great deal of his psychic energy in fighting his inner conscience. The inner conscience (Super Ego) is not exactly a benevolent institution, as Freud pointed out: "The Super Ego seems to have made a one-sided selection, to have chosen only the harshness and severity of the parents, their preventive and punitive functions, while their loving care is not continued." To live in peace with one's own conscience presupposes constant checkmating of that inner department of the personality. This is normally achieved by avoiding too many conflicts with the Super Ego's demands and by using a part of the inner aggression to ward off the latter's reproaches. In neurotic conditions, although the Super Ego is constantly appeased by suffering and depression, it still does not leave the victim in peace. The Ego is therefore forced to furnish ever new weapons against its chronic tormentor. These weapons are numerous.[8] One of the possibilities is constant showing up of the Super Ego as hypocritical, by pointing out that other "authorities" (the Super Ego is built partially by introjections of parental authorities) are not so innocent either. If, therefore, in such a situation of inner conflict a "bad influence" is at hand, an inner identification can take place as an episode in the fight with the inner conscience. The "temptation" of the bad example is thus used as an intrapsychic weapon against the severe inner conscience and not, as is naively assumed, just as a release of repressed wishes.

We see, therefore, that the presence of "good" or "bad" examples does not suffice *per se*. They are used or misused according to the specific unconscious needs of the specific individual.

Not very different is the role of "good advice." First of all, good advice is always met with mistrust, particularly by neurotics. The reason is that these people have never overcome the feeling that their parents were hypocritical; for instance, forbidding sex to the children, being horrified at it, but indulging in it themselves. One neurotic patient quoted Heine: "They preached water and drank wine." Another called his father the

"vote dry and live wet" type. Another patient consulted a gynecologist in Paris for information about contraceptives. Upon receiving the information, she remained sceptical, believing that the doctor had two types of advice: that which he used for patients and that which he used himself. In other words, she projected the idea of parental hypocrisy on the physician.

There is a hopeless contradiction in the external setting of getting good advice. Good advice can reasonably be given only by older people, who have burned their fingers repeatedly. On the other hand, the people seeking advice are mostly younger people, who are very distrustful of their elderly advisors. One patient discarded all advice with La Rochefoucauld's famous statement: "Old men are fond of giving good advice to console themselves for no longer being in a position to give bad examples."

Besides that *a priori* doubt, the fact remains that people just don't have an organ for accepting experiences which they themselves have not lived through. Moreover, people do not really learn from their own experiences, popular contrary assumptions, notwithstanding. And of course other people's experiences just don't count, at least affectively. Otherwise how is it understandable that every generation repeats the mistakes of its forefathers, and that people so often make the same mistakes repeatedly ("Once a sucker, always a sucker").

We often encounter the idea that logic must and can convince people. Nothing is further from clinical experience. The overvaluation of logic is based on ignorance of unconscious factors. Everybody makes all the mistakes which the psychic masochism embedded in his neurosis forces him to make, which though in other circumstances avoidable, are in the specific case inevitable because of unconscious reasons. I once analyzed a man who habitually lost money by lending it to "friends" who proved to be unreliable. The reason was that unconsciously he had the need to prove to himself how unjustly he was treated, in repetition of an infantile situation. "How often must I repeat this nonsensical situation?" asked the patient in great distress when caught once more in his vicious circle. "As long as you cling to your neurosis" was the simple answer.

Amusingly enough, some neurotics believe that being penitent and promising themselves to accept and follow good advice, helps them. Of course it doesn't. Some neurotics even rationalize their defeats on the ground that they are "superior" people. One such patient quoted Luther: "Great men owe God one great mistake for which they have to pay dearly; no great man does a simple mistake." "On this basis you are a permanent 'great man,'" was my reply.

"Good advice" is in general so ineffective because it conflicts with the child-like megalomania deeply embedded in every individual.[9] It is surprising how many people run around with the unconscious belief that they alone are "exceptions," to whom human experience does not apply. For these people "experience" consists of a hopeless attempt to reconcile the irreconcilable; fantasy to facts.

Must we draw the conclusion that good advice and examples are worthless? Of course not. What we must guard against is the naive belief that facts *per se* make any impression on the individual. Only insofar as these facts fit into the normal or neurotic picture of the personality are they effective. If a person is normal, he identifies with his educators. Only in this circuitous, unconscious way are "good examples" and "good advice" accepted and "bad examples" and "bad advice" neutralized.

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# Outline of Antisyphilitic Treatment in a State Hospital

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This outline presents briefly the actual routine of antisyphilitic treatment used at Mayview State Hospital. It is not intended to survey the literature or to discuss the merits of various types of therapy. With the drastic shortage of medical and nursing personnel, a system of treatment had to be organized that would fulfill the following requirements:

(a) It must be simple and easy to follow.
(b) It must function as near automatically as possible.
(c) The routine must not only be conservative but must also provide adequate treatment.
(d) It must fill the needs of the institution.

The fundamental principles of treatment are not original with us. The general routine is a combination of standard, accepted plans found in the literature altered by experience with the special needs of this hospital.

## ROUTINE ANTISYPHILITIC TREATMENT

1. Wassermann and Kahn tests are routine on every new admission.
2. If tests are positive, the following procedures are carried out:
   (a) A diagnostic spinal tap is performed.
   (b) Bismuth injections are ordered.
   (c) "Classify as Luetic" is noted on the patient's chart in order that it may be reported to the State as required.
3. If the spinal fluid shows evidence of central nervous system syphilis:
   (a) A fever therapy permit is requested from the family through the Social Service Department.
   (b) A consultation slip is filed for examination of the eyegrounds and visual fields for tryparsamide, and an x-ray of the chest is ordered.
4. The patient is given a complete course of bismuth before either fever or arsenical therapy is instituted.
5. In systemic syphilis, alternating courses of bismuth and mapharsen are given (8 weekly injections of bismuth and 8 or 10 weekly injections of mapharsen constitute a course for each drug).
6. In central nervous system syphilis, the first course of bismuth is followed by fever therapy.
7. In preparation for fever therapy the patient has a complete blood count, blood chemistry, an x-ray of the chest, and must show no evidence of obvious cardio-renal vascular disease.
8. The regular course of fever therapy consists of 36 hours of fever given in 12 treatments over a period of 6 to 12 weeks with simultaneous chemotherapy.
   (a) Pre-fever routine:
      1. Sodium chloride, 30 grains, four times during the day preceding treatment.
      2. Soap suds enema the night before treatment.
      3. Carbohydrate in the form of orange juice is given the night before and breakfast is omitted the morning of treatment.
   (b) The patient receives just previous to each treatment:
      1. Morphine Sulfate gr. ¼.
      2. Bismuth (injection).
      3. Water — 200 cc.
      4. Two salt tablets.
   (c) Often it may be necessary to repeat the morphine during the course of the treatment if the patient is restless. An ampule of coramine is at times helpful in those who show some respiratory or circulatory difficulty. Carbon dioxide and oxygen is also available.
   (d) Mapharsen is injected intravenously at the height of the fever.
   (e) The patient receives two salt tablets every hour and at least 800 cc. of water during the treatment.

(f) A complete blood count is obtained at the mid-point and at the completion of each course.

9. It is advisable that every patient have two courses of fever therapy with a four week rest period between courses. During this rest period no form of treatment is given.

10. Following the completion of fever therapy or if for some reason it is contraindicated, tryparsamide may be given in courses of 12 to 20 injections alternated with regular courses of bismuth. Tryparsamide should not be given unless the eyegrounds and visual fields have been checked by the visiting ophthalmologist. During the treatment with tryparsamide any ocular symptoms should be an indication for an immediate examination of the eye-grounds.

11. Each patient has a blood test and spinal tap done immediately following the completion of each course of fever therapy and at least twice yearly during routine antisyphilitic treatment.

12. Duration of treatment:

(a) Early latent systemic syphilis is considered to include the first four years after infection. This type should receive at least two years of continuous treatment, consisting of alternating courses of mapharsen and bismuth without rest periods.

(b) Late latent systemic syphilis includes all those cases after four years. Patients under 50 years of age receive one year of continuous treatment at the end of which one month's rest period is allowed. During the second year the alternating courses of bismuth and mapharsen are continued but with a month's rest period after every course of mapharsen.

(b) In persons over 50 and in debilitated patients the treatment must be altered to suit their condition. Continuous treatment is usually not required and rest periods should follow each course of mapharsen. Treatments may be given over a period of two years.

(c) Primary and secondary early syphilis are not seen frequently in the hospital. A standard text-book should be consulted for the treatment of these types.

(d) In paresis if the patient is unable to receive fever therapy, alternating courses of tryparsamide and bismuth are given for two or three years or until 75 to 100 injections of tryparsamide have been administered.

(e) In all types of syphilis when treatment is stopped at the end of two or three years, there is a yearly check of the blood and spinal fluid followed by a course of bismuth.

13. When patients are paroled, arrangements are made through the Social Service Department for the continuance of their treatment either at a clinic or from a private physician.

14. Records: The records of antiluetic therapy consist of four cards. A large card upon which each treatment is entered and which remains in the department administering the treatment. A small card shows the various courses of treatment given together with the dates. On a third card is recorded the results of blood and spinal fluid examinations. A final card shows any special tests given, including eyegrounds. The last three cards are kept in the files in the admitting buildings.

## COMMENT

Of course all routines must be altered as new methods become available. And in the treatment of syphilis, many new drugs and new methods have come to the fore in recent years.

Mercury, once the standard antisyphilitic remedy, proved inferior to arsphenamine and bismuth compounds. Then for many years the arsphenamines and the other arsenical derivatives were considered the most potent drugs at our disposal. Now there is penicillin which offers very, very much in the treatment of syphilis. We have found that penicillin in courses of 1,200,000 Oxford units is an extremely useful adjunct to fever therapy in neurosyphilis. It is particularly valuable with those patients who are too disturbed or too ill to be given fever. Time and experience will

determine whether this new drug will partially or completely replace other forms of therapy in the treatment of syphilis.

It has been noted in the past that morphine frequently excited certain patients receiving fever therapy. Pantopon has been found to be an adequate substitute and recently demerol has been suggested for use in this manner.[1] One hundred mg. of demerol may be given intermuscularly just before the fever treatment. The dosage is repeated in two or three hours. A third injection of 50 or 100 mg. can be given in two or three hours after this if the patient is restless or excited. Heldt, Dalles, and O'Connell noted objective and subjective improvement in the general comfort of the patient within fifteen minutes after the injection of demerol and the usual apprehension of the fever patient was noticeably allayed.

Certain types of visual defects have been indicated as coming on during tryparsamide therapy.[2] These symptoms have been noted as acute and chronic, with the chronic symptoms divided into objective and subjective. It is of prime importance that these combinations of symptoms be brought to the attention of the ward physician so that they may be recognized during therapy with tryparsamide.

The chronic subjective reactions are said to occur in approximately 5 to 10 per cent of the patients who are on tryparsamide therapy. The symptoms consist of flashes, sparks, and spots in front of the eyes and are often accompanied by visual distortions and decreased central visual acuity. It is often difficult to detect the objective findings which occur less often and give permanently unfavorable results in about 1 per cent of cases. The chronic objective reaction consists of contraction of the visual field, particularly of the upper and lower nasal areas, and moderate depression of central vision. The prognosis in the chronic reactions is usually good if recognized early and the drug stopped.

In cases of optic atrophy the question often arises whether tryparsamide should be given. Opinions on this point are divided and it is our feeling that it is best to substitute some other form of therapy in these cases. It is conceded that there is no definite evidence that the presence of optic atrophy in itself is absolute contraindication to the use of tryparsamide.

In paresis if the patient is unable to receive fever therapy, alternating courses of tryparsamide and bismuth are given for two or three years, or, until there have been 75 to 100 injections of tryparsamide. In the past, alternating courses of bismuth and tryparsamide were also given to those patients who had completed fever therapy. However, reports from Bellevue Hospital, New York City, by Dattner, Thomas, and Wexler,[3] on their work with mapharsen, given daily for ten days following the last elevation of temperature from malaria, offers a possible method of shortening chemotherapy after artificial fever. Their work, commenced in January 1940, indicated that if 60 milligrams mapharsen be given daily to the patient in the hospital for ten days, no further chemotherapy may be required after the patient was discharged, providing the cerebro-spinal fluid examined six months after completion of therapy, shows no evidence of activity. This method offers great advantages in state hospitals for many patients refuse or neglect to continue syphilitic treatment after they leave the jurisdiction of the hospital. Again, only time and study will indicate the safety of this intensive course of therapy.

It is interesting to note the criteria for activity of paretics as indicated by Dattner and his associates.[4] They state that there has always been little reliable information concerning the amount of post-fever treatment required to insure good results and to prevent a relapse. A summary of their conclusions is as follows:

(a) In untreated cases of syphilis a positive spinal fluid Wassermann reaction with negative findings of other tests does not prove activity. When a positive spinal fluid Wassermann test is associated with increased cells or protein, activity must be assumed.

(b) In cases under specific therapy, normal cell counts and protein content in spinal fluids with positive Wassermann tests merely indicate that the infectious process is inhibited and it might become active again within six months after treatment is stopped.

(c) If the spinal fluid shows no more than 3 or 4 cells per cubic millimeter and definite diminution in protein content six months

after treatment has been discontinued, in all probability the activity of the syphilitic process in the central nervous system has been permanently checked, although it may require years before the complement fixation and colloidal tests become negative.

There are three types of bismuth salts generally available for antisyphilitic treatment. The selection of a suitable preparation usually is within the discretion of the physician. However, this hospital has selected a water soluble salt for standard use. The water soluble salts of bismuth offer the advantage that they are more rapidly and easily absorbed than the oily substances, and therefore provide somewhat more rapid results. A drawback to this type of preparation is that it must be administered two or three times a week, and, because of its rapid action often causes a severe stomatitis. The danger of embolism or infarction is less with water soluble salts.

The bismuth preparations in oil solutions have their advantages in that they cause less pain upon injection and the injections need be made only once weekly. However, with these preparations the danger of sterile abscesses, or embolism and infarction is always present.

A third type of bismuth preparation is the liposoluble salt, first used in 1925. The main advantages of this form of bismuth is that it is rapidly effective and the absorbtion is maintained almost as long as with insoluble salts. The injections of the liposoluble preparations are also painful but many of them need be injected only once a week.

The use of bismuth by oral administration has not been found practical in the care of mental patients.

## SUMMARY

The routine treatment of syphilis in a state hospital requires a system which is not only simple and partially automatic but which also provides sufficient, adequate, and controlled therapy. The system should be based on standard and conservative procedures but should be sufficiently flexible to allow for some initiative on the part of the ward physician and for the introduction of new and accepted types of therapy. The treatment may be remarkably simplified in the future by the use of penicillin, not only within the state hospital but also in general hospitals. Thus, many patients will not require commitment to a mental hospital for treatment or if such is necessary their stay in the hospital will be shortened.

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# Neurological Clinical Pathological Conference

of the

Cincinnati General Hospital

CHARLES D. ARING, M.D., *Editor*

Case No. 45-2052

## PRESENTATION

This 74 year old man, previously well, was admitted to a private hospital on March 24. He had lived alone for many years, but it was possible to piece together a story from several sources. It was said that he had suddenly lost consciousness and speech three days prior to admission. Presumably he had been to the bathroom at the time, for he was found there on the floor. With returning consciousness, it was noted that the left limbs were weak. Occasionally he would try to utter a word, but was mainly uncommunicative.

It was learned that he had previously fallen, though the exact date of the fall was unknown. It was said that he had slipped "during the last icy spell," which was thought to have been two or three weeks previously, and had bruised his left leg. He was an active person; he got outside of his apartment at least once daily. There were several witnesses to the fact that a day or so before the onset of the left hemiparesis there was a tendency to walk backward; once he arose in the night to go to the toilet and had walked backward. The duration of this symptom and its exact description were never available.

At the admission examination the patient would arouse occasionally, look around, and say nothing. He tended to drowse off. Respirations were of the Cheyne-Stokes type. The pulse rate was 75; the blood pressure 210/140. The left pupil was 4 mm., the right 3 mm. in diameter. They reacted normally. The eyes tended to wander to the left with a jerking movement; however, on passively turning the head to the right the eyes reached the right canthi. He would swallow a teaspoonful of water, but if this amount were repeated too fast he would choke. The jaw jerk was hyperactive. There did not seem to be any voluntary movement in the left extremities, which were flaccid. The left hemiplegia included the face. There was some weakness of the left eyelids. It was impossible to test any sensory function. The deep reflexes were hyperactive. There was no Hoffmann response. There was a strong bilateral extensor response. There was reflex withdrawal of either extremity from the stimulus; the withdrawal was stronger on the right. There was clearing ecchymosis of the skin overlying the lower third of the left tibia anteriorly.

On March 26 his coma was complete. There was increased resistance to passive movements of the right extremities. The right fingers were held in a semi-flexed attitude. There were weak bilateral Hoffmann and strong bilateral extensor plantar responses.

His condition remained unchanged until vomiting occurred on March 27. Throughout the early portion of the hospital stay he tended to mumble incoherently. On March 28 there occurred some twitching of the musculature of the head and neck, noted only by the nurses. On that day all the limbs were toneless, and heavy stimulus was necessary to elicit a very weak extensor response on the left. There were no Hoffmann responses. He died on March 31.

*Laboratory Data:* The rectal temperature ranged between 99 and 101° F., rising on the final day to 103°. The pulse rate usually ranged between 70 and 100, respiration between 10 to 35. The blood Wassermann was negative. The urine contained acetone and the nonprotein nitrogen on March 27 was 48 mg. percent.

## DIFFERENTIAL DIAGNOSIS

Doctor Edgar Lotspeich: A previous history of trauma, however slight, regardless of the age of the patient always suggests the possibility of subdural hematoma. The sudden loss of consciousness is more suggestive of a stroke although one may occasionally see sudden onset of symptoms in subdural hematoma. The patient's blood pressure of 210/140 on admission is probably indicative of hypertensive cardiovascular disease rather than

a sign of increased intracranial pressure since it is somewhat higher than is usually seen in the latter condition.

Whether a stroke is thrombotic, embolic, or hemorrhagic in nature is frequently a difficult differential point. An embolus causes the most rapid onset of symptoms but we know of no lesion in this patient from which an embolus might have originated. With the usual case, cerebral hemorrhage results in a more rapid onset of symptoms than does thrombosis. However, one may at times see sudden onset of symptoms in a case later proven by autopsy to have been softening. The time factor is not an infallible method of differentiating these conditions.

The history of the patient having walked backward for a day or so before the onset of the hemiplegia is interesting and although I do not know its exact significance it would appear to indicate that some abnormality of the brain existed before hemiplegia occurred. The gait would not seem to be an example of retropulsion as seen in lesions of the corpus striatum or midbrain.

The wandering of the eyes to the left with a jerking movement could indicate an irritative lesion either in the right posterior frontal area where electrical stimulation produces conjugate deviation of the eyes to the left, or a left-sided lesion in the pons below the level of decussation of the cortico-pontine fibers subserving conjugate deviation. The fact that the eyes could be made to turn to the right by passive head movement indicates a supranuclear lesion on the right side; in this instance the eyes evidently were working reflexly but not voluntarily.

Loss of voluntary movement and flaccidity of the left extremities and face are the usual findings in an upper motor neurone lesion of sudden and recent onset. The inability to speak in a patient who is in semicoma as this patient was cannot be interpreted as aphasia or anarthria. It may well be just a reflection of his mental state.

The findings thus far are consistent with a unilateral lesion. However, the presence of bilateral extensor responses indicates involvement of both pyramidal tracts. Bilateral vascular lesions in the region of the internal capsules and basal ganglia may occur but are rare. A more likely explanation would seem to be that these findings result from pontine hemorrhages secondary to a massive hemorrhage in the right cerebral hemisphere. I think this man had hypertensive cardiovascular disease with intracerebral hemorrhage in the region of the right internal capsule and basal ganglia with secondary pontine hemorrhage.

## DISCUSSION OF PATHOLOGY

Doctor Charles D. Aring: The findings outside of the nervous system were aspiration pneumonia of the right upper lobe and congestion and edema of the lungs. There was slight generalized arteriosclerosis.

There was a large subdural hematoma overlying the right frontal and parietal regions. This clot was mostly soft with some slight organization of the portion proximate to the dura. Careful examination of the skull revealed no fracture.

The right frontal and parietal lobes had been moderately compressed by the subdural hemorrhage. The inferior portion of the mesial face of the right frontal lobe had herniated beneath the falx for a distance of 6 cm. (antero-posteriorly). The right frontal herniation was again seen in the vertical cuts through the cerebrum when it was determined that acute softening had occurred in this portion of the brain. The anterior half of the right lateral ventricle had been pushed downward and to the left. The vessels of the circle of Willis did not show arteriosclerosis.

### *Clinical Diagnosis*

Intracerebral hemorrhage, right.

### *Doctor Lotspeich's Diagnosis*

Hypertensive cardiovascular disease.
Intracerebral hemorrhage in the region of the right internal capsule and basal ganglia with secondary pontine hemorrhage.

### *Anatomical Diagnosis*

Subdural hemorrhage, right.
Softening of the mesial inferior portion of the right frontal lobe which had herniated beneath the falx cerebri.
Aspiration pneumonia of right upper lobe.
Congestion and edema of lungs.

Doctor Aring: This case was presented to illustrate how alert one must remain if the patient with subdural hemorrhage is to be cured. In this instance the clinician was so sure of his diagnosis that he did not bother to do a lumbar puncture. In retrospect there are several points in the story of this case which favor the diagnosis of subdural hemorrhage. There was evidence of injury in the left lower extremity. It is well known that the trauma associated with subdural hemorrhage need not be severe, and that the patient may have suffered similar injury on many occasions previously. We should make it a rule that when the story is incomplete a fair substitution for a history of injury is the evidence of trauma that may be found on inspection of the head, extremities, and trunk. Another point in favor of subdural hemorrhage was the bilateral neurological findings in the presence of maintained consciousness. It would seem reasonable to expect that an intracerebral hemorrhage large enough to result in bilateral signs ought to have produced complete coma, and rather more rapid death than did the lesion in our patient. A final bit of evidence for subdural hemorrhage was the muscular twitching; localized convulsions of this type indicate cortical irritation and one would not expect them with a deep hemispheral lesion.

In a patient of this age the diagnosis is only made by being alert for the possibility of subdural hematoma in all persons showing mental or neurological signs. Even so one occasionally misses the diagnosis.

It is probable that the laboratory would not have been of much help had it been thoroughly utilized, though trephine openings preparatory to ventriculography would have possibly revealed the lesion. It should be remembered that the incidence of skull fracture is about 18 per cent* in those persons coming to autopsy with subdural hemorrhage.

*Leary, T: "Subdural or Intradural Hemorrhages," *Arch. Path.*, 28: 808-820 (Dec.) 1939.

# Book Reviews

A HUNDRED YEARS OF MEDICINE. *By C. D. Haagensen and Wyndham E. B. Lloyd. New York: Seridan House, Inc., 1943. Pp. xii-444.*

This book is an excellent general account of the progress of medicine for the last hundred years. It will appeal to laymen, medical students, and to physicians, and to everybody interested in instructive non-fictional literature. It will enable a brief but actually good appreciation of the social significance and force of medical progress from one generation to another. It highlights the lives of medical geniuses, offers the general facts of medical history, and records in individual consecutive accounts the accomplishments of medicine against various diseases which have played a significant role in the history of the present social order. It is simply written, with no forced drama or exaggeration but with full and proper reliance upon the inherent drama of life and sickness to arouse interest. Special bibliographies are given for each chapter, there are numerous illustrations, and the book is indexed.

ANATOMY OF THE NERVOUS SYSTEM. *By Olof Larsell. New York: D. Appleton-Century Company, Inc., 1942. Pp. xviii-443.*

This text-book of the anatomy of the nervous system is written from the developmental and functional point of view. It reads easily, is instructive, and is competently illustrated. It concludes with an atlas of the spinal cord and brain and a bibliography of general references and another of footnote references. Gross anatomy is avoided and each major division of the nervous system is treated separately, to avoid the painful repetition usually encountered in neurological textbooks. Emphasis is placed upon those items most needful to remember. The book is well indexed.

MILTON H. ERICKSON
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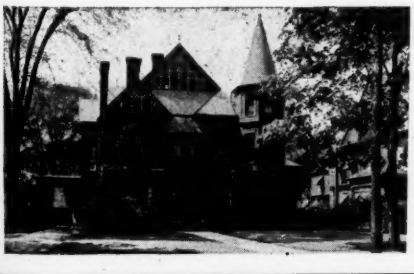

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